

## CLAIMS

What is claimed is:

1. A hybrid injection unit for an injection molding machine, comprising:
  - a plasticizing screw having a shaft and received in a plasticizing cylinder for rotation and displacement in an axial direction;
  - a first electric motor operatively connected to the shaft of the plasticizing screw for implementing the rotation of the plasticizing screw;
  - a second electric motor operatively connected to the shaft of the plasticizing screw for implementing the axial displacement of the plasticizing screw;
  - a pressure source;
  - at least one piston and cylinder unit operatively connectable to the pressure source for support of the second electric motor in injection direction; and
  - a traverse acted upon by one end of the piston and cylinder unit and rotatably supporting the shaft of the plasticizing shaft, said traverse acting upon the shaft between a force introduction point of the second electric motor into the shaft, on one hand, and the plasticizing screw, on the other hand.
2. The hybrid injection unit of claim 1, and further comprising a housing, said piston and cylinder unit having another end supported by the housing.

3. The hybrid injection unit of claim 1, and further comprising a housing, said piston and cylinder unit having at least one portion formed integral with the housing.
4. The hybrid injection unit of claim 1, wherein the first electric motor for rotating the plasticizing screw is constructed as direct motor having a rotor mounted in fixed rotative engagement with the shaft of the plasticizing screw.
5. The hybrid injection unit of claim 4, wherein the rotor is connected with the shaft of the plasticizing screw for displacement in axial direction.
6. The hybrid injection unit of claim 1, wherein the shaft of the plasticizing screw has a portion constructed as a spindle forming part of a spindle and nut assembly whose other part is a nut mounted on the spindle and directly operated by the rotor of the second electric motor for effecting the axial displacement of the plasticizing screw.
7. The hybrid injection unit of claim 6, wherein the spindle and nut assembly is constructed as a planetary roller mechanism.
8. The hybrid injection unit of claim 6, wherein the piston and cylinder unit is disposed in substantial parallel relationship to the spindle and nut assembly.

9. The hybrid injection unit of claim 1, and further comprising at least one further said piston and cylinder unit acting upon the traverse.
10. The hybrid injection unit of claim 1, wherein the pressure source includes a pump, and a speed-controlled electric motor for driving the pump.
11. The hybrid injection unit of claim 1, wherein the pressure source forms part of the injection unit.
12. The hybrid injection unit of claim 1, wherein the pressure source is an external pressure source.
13. The hybrid injection unit of claim 1, and further comprising a double-acting piston and cylinder unit acting in two directions and fluidly connected to the pressure source for displacement of the hybrid injection unit in axial direction of the plasticizing screw.

14. An injection molding machine, comprising:
- a hybrid injection unit, including a plasticizing screw having a shaft and received in a plasticizing cylinder for rotation and displacement in an axial direction, a first electric motor operatively connected to the shaft of the plasticizing screw for implementing the rotation of the plasticizing screw, a second electric motor operatively connected to the shaft of the plasticizing screw for implementing the axial displacement of the plasticizing screw, at least one hydraulic piston and cylinder unit for controlled operation of the plasticizing screw;
  - a mold clamping unit having at least two platens moveable relative to one another; and
  - a pressure source operatively connected to the hydraulic piston and cylinder unit and operatively connected to the mold clamping unit.
15. The injection molding machine of claim 14, and further comprising at least one piston and cylinder unit operatively connected to the pump of the pressure source for applying a clamping pressure for the clamping unit.
16. The injection molding machine of claim 14, wherein the clamping unit includes a spindle and nut assembly for opening and closing operations, and a hydraulic motor for driving the spindle and nut assembly, said hydraulic motor being operatively connected to the pump of the pressure source for rotation of the spindle or the nut in both rotation directions.

17. The injection molding machine of claim 14, wherein the first electric motor for rotating the plasticizing screw is constructed as direct motor having a rotor connected in fixed rotative engagement with the shaft of the plasticizing screw.
18. The injection molding machine of claim 17, wherein the rotor is connected with the shaft of the plasticizing screw for axial displacement.
19. The injection molding machine of claim 14, wherein the shaft of the plasticizing screw has a portion constructed as a spindle, forming part of a spindle and nut assembly whose other part is a nut mounted on the spindle and directly operated by the rotor of the second electric motor for effecting the axial displacement of the plasticizing screw.
20. The injection molding machine of claim 19, wherein the spindle and nut assembly is constructed as a ball screw mechanism.
21. The injection molding machine of claim 19, wherein the piston and cylinder unit is disposed in substantial parallel relationship to the spindle and nut assembly.

22. The injection molding machine of claim 14, and further comprising a traverse acted upon by one end of the piston and cylinder unit and rotatably supporting the shaft of the plasticizing shaft, and at least one further said piston and cylinder unit acting upon the traverse.
23. The injection molding machine of claim 14, wherein the pressure source has a pump, and a speed-controlled electric motor for driving the pump.